IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	**MAIL STOP AMENDMENT**
Mitsunobu YOSHIDA et al.	Group Art Unit: 1794
Application No.: 10/573,707	Examiner: Gary D. HARRIS
Filed: March 27, 2006	Confirmation No.: 3545
For: LAMINATE OF MAGNETIC SUBSTRATES AND METHOD OF MANUFACTURING THE SAME	

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

A Pre-Appeal Conference is requested to review the above-identified application. No amendments are being filed with this request. For at least the reasons which are set forth below, applicants respectfully submit that the outstanding rejections are clearly improper.

Overview

Claims 1-3 and 6-20 are pending in the application. Claims 6-8 have been withdrawn from consideration and claims 1-3 and 9-20 are under rejection as set forth in the following grounds.

Claims 1-3, 9-13, 15 and 16 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by or alternatively under 35 U.S.C. §103(a) as being unpatentable over JP 04-170012 (the JP '012 publication).

Claims 14 and 17-20 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over the JP '012 publication in view of Pettigrew et al., U.S. Patent No. 4,960,651.

Claims 1-3 and 9-16 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Pettigrew et al. in view of Jin et al., U.S. Patent No. 7,106,163.

Argument

Independent claims 1 and 15 under consideration each relate to a laminate comprising two or more magnetic metal thin plates with each magnetic metal thin

plate being selected from the group consisting of an amorphous metal plate and a nano crystal magnetic plate (claim 1) or a nano crystal magnetic plate and a silicon steel sheet (claim 15) and coated with a high molecular compound. The two or more magnetic metal thin plates are partially in contact with one another by applying pressure so that the high molecular compound that is positioned between the two or more magnetic metal thin plates is pushed out, and wherein the volume resistivity defined in JIS H 0505 in a direction perpendicular to the high molecular compound surface of the magnetic metal thin plates is from 0.1 Ωcm to less than 10^8 Ωcm.

In considering the claims under consideration, several features are of particular interest. More specifically, the independent claims define "**two or more** magnetic metal thin plates with **each** metal thin plate being selected from a defined group of materials **and** coated with a high molecular compound". As discussed in the specification and illustrated in the Examples, this means that each plate is coated with the high molecular compound. Claims 17 and 18 recite that the number of magnetic metal thin plates is five or more.

A further important claimed feature in the independent claims is the recitation that the "two or more magnetic metal thin plates are partially in contact with one another by applying pressure so that the high molecular compound that is positioned between the two or more magnetic metal thin plates is pushed out". As explained in paragraphs [0025] to [0026] of the specification, by applying pressure so that the magnetic metal thin plates are partially in contact with one another, one can effectively reduce volume resistivity. By having the high molecular compound present, one can suppress eddy currents between the magnetic metal thin plates and by applying the recited pressure, the stacking efficiency can be improved while addressing the problem of heat build-up discussed in paragraph [0004].

The recited arrangement enables the volume resistivity defined in JIS H 0505 in a direction perpendicular to the high molecular compound surface of the magnetic metal thin plates to be from 0.1 Ωcm to less than 10^8 Ωcm, as set forth in claims 1 and 15, and enables advantageous results to be obtained as illustrated in Table 1 in paragraph [0082]. The results demonstrate that when a metal laminate is prepared in accordance with the present invention, including the application of pressure and the recited volume resistivity, good thermal conductivity and low temperature elevation can be obtained. Such results are in contrast with the Comparative

Examples which have a volume resistivity above and below the recited range. In this latter regard, the Comparative Examples demonstrate that when the laminate is not subjected to the recited pressure or if there is insufficient high molecular compound between the plates, the claimed volume resistivity is not obtained and poor thermal conductivity, temperature elevation or both occur. The results set forth in the Table also show that recited pressure does have an effect on the laminate and the recited volume resistivity is not an inherent feature based on the type of metal plates.

With the foregoing discussion and technical evidence in mind, applicants respectfully submit that the claims of record cannot be properly rejected over the cited prior art. The JP '012 publication discloses a magnetic core formed by winding an amorphous metal ribbon to form an annular shape which is then coated with an epoxy resin. This technique provides the structure illustrated in the document which the Examiner has reproduced on page 4 of the Official Action dated April 3, 2009.[1] As is evident therefrom, the continuous amorphous metal ribbon that forms the magnetic core contacts the epoxy resin coating only at the outermost surface thereof. As such, the JP '012 publication does not meet the recitation in claims 1 and 15 of "**two or more** magnetic metal thin plates with **each** metal thin plate being selected from a defined group of materials **and** coated with a high molecular compound". It is further apparent that since JP '012 publication does not disclose two or more plates that are each coated with a high molecular compound, it cannot meet the further recitation that the "magnetic metal thin plates are partially in contact with one another by applying pressure so that the high molecular compound that is positioned between the two or more magnetic metal thin plates is pushed out".

On page 4 of the final Action, the Examiner has essentially asserted that the claimed volume resistivity is inherent and that the process limitation does not affect the patentability of the claims or that these features are obvious. All of these positions are incorrect. Without each metal thin plate being coated with a high molecular compound, the windings of the core of the JP '012 publication would directly contact one another which would result in very low volume resistivity as shown in Comparative Example 2. As for the Examiner's comment on page 2 of the Action that the claims are not commensurate in scope with Comparative Example 2,

[1] From the statement provided in the last paragraph of page 3 of the final Action, it is apparent that the Examiner meant to reproduce it again.

applicants note that it is not the function of the claims to be commensurate in scope with a comparative example, but rather to define over it and, in this instance, the claims clearly are different for the reasons set forth above. Furthermore, Comparative Example 1 shows that even if the same metal thin plates and high molecular weight compound are used, if the recited pressure is not applied, the characteristics of the laminate are significantly different. The results in Table 1 unquestionably show that when the teachings of the present invention are not followed, the defined volume resistivity is not inherently obtained and substantially adverse consequences occur. Accordingly, the JP '012 publication cannot support a rejection of any of the claims of record.

The additional reliance on Pettigrew et al. to show a specific type of high molecular compound or five or more layers does not remedy the noted substantial deficiencies of the JP '012 publication since this would at best simply replace the outside coating of the core with the polyimide of Pettigrew et al. Moreover, as Pettigrew et al. relates to a totally different material (i.e., an antipilferage tag), one of ordinary skill in the art would not even attempt to take the teachings of the patent and try to apply it to the magnetic core of the JP '012 "to obtain the desired magnetic properties and hysteresis loop shape" as alleged on page 8 of the Action.

With regard to the last rejection, applicants again note that Pettigrew et al., relates to an antipilferage tag which includes, as essential components, a resin substrate on which a magnetic material is deposited (an amorphous metal glass) and a deactivation layer formed from a semi-hard material. The antipilferage tag is designed to be deactivated at the point of sale by exposing the tag to a magnetic field. As shown if Figure 2, the tag involves a paper face sheet (1), an adhesive (2), an amorphous metal glass film (3) on a polymer substrate (4), an adhesive (5), a deactivating element (shown as a series of islands (6)), an adhesive (7), and a backing sheet (8). The amorphous metal glass is said to have a high intrinsic permeability, low or zero magnetostriction and low coercivity (column 2, lines 49-52) whereas the deactivation layer is described as being magnetically semi-hard, i.e., with a coercivity Hc in the range 1,000-10,000 A/m (column 8, lines 27 to 29). The tag is prepared by gluing the various layers together with an emulsion glue or thermoplastic glue as discussed at column 15, lines 9-23.

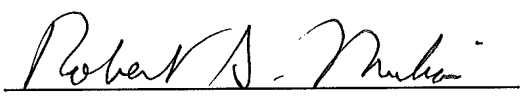
Pettigrew et al. does not disclose or teach the claimed two or more magnetic metal thin plates with each metal thin plate being selected from a defined group of materials and coated with a high molecular compound with the two or more magnetic metal thin plates being partially in contact with one another by applying pressure so that the high molecular compound that is positioned between the two or more magnetic metal thin plates is pushed out. There is no partial contact between the amorphous metal glass and the deactivating element which is separated by both the polymer substrate (4) and the adhesive (5). As for the individual elements (6), they are referred to as "islands" which negates the concept of contact. Other forms of the deactivating layer material, such as the illustrated needles, wool and mesh of Figure 4 are not metal thin plates as defined in the claims. Furthermore, Pettigrew et al. does not apply pressure so that a high molecular compound is pushed out which has been shown to affect the characteristics of the defined laminate. In this regard, since the patent relates to an antipilferage tag, it is unconcerned with the noted challenges, such as temperature elevation, which the present invention addresses.

Pettigrew et al. is further deficient with respect to the defined magnetic metal thin plates that are selected from an amorphous metal plate and a nanocrystal magnetic plate or a nanocrystal magnetic plate and a silicon steel sheet. As for Jin et al., the patent relates to the disparate technology of an isolation transformer core having a coil and a core member. One would not use the teachings relating to this technology to attempt to modify the resistivity of the antipilferage tag of Pettigrew et al.

For the reasons provided above and in the remarks of responses which have been filed, applicants submit that the claims of record are unquestionably patentable over the teachings of the cited prior art.

Respectfully submitted,
Buchanan Ingersoll & Rooney PC

Date: March 1, 2010

By: 

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